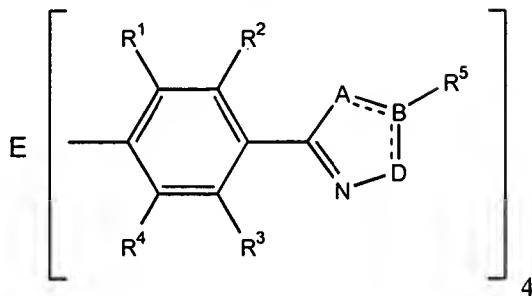


WHAT IS CLAIMED IS:

- 1 1. A compound of the following formula:



wherein

each of R¹-R⁴ is, independently, H, substituted or unsubstituted C₁₋₆ alkyl, OH, C₁₋₆ alkoxy, N(R⁶)(R⁷), in which each of R⁶ and R⁷ is, independently, H or substituted or unsubstituted C₁₋₆ alkyl, NO₂, CN, or CO₂R⁸, in which R⁸ is H or C₁₋₆ alkyl; and

wherein R⁵ is H, substituted or unsubstituted C₁₋₆ alkyl, substituted or unsubstituted C₂₋₆ alkenyl, substituted or unsubstituted C₂₋₆ alkynyl, substituted or unsubstituted C₆₋₂₀ aryl, substituted or unsubstituted alkylaryl, substituted or unsubstituted C₄₋₂₀ heteroaryl, C₁₀₋₂₀ diarylaminoaryl, or is absent, or B and D, together with R⁵ and R¹¹, are substituted or unsubstituted aryl;

wherein A is O, S, N(R⁹) in which R⁹ is absent, H, substituted or unsubstituted alkyl, or substituted or unsubstituted aryl, N=N, or N=C(R¹⁰) in which the C is adjacent to B and in which R¹⁰ is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl;

wherein B is C or N;

wherein D is N, NH, or C(R¹¹) in which R¹¹ is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl, or B and D, together with R⁵ and R¹¹ are substituted or unsubstituted aryl;

and wherein E is C or Si;

provided that when A is O and D is N, then B is C and the floating double bond is between B and D;

further provided that when A is N(R⁹) and R⁹ is absent, then B is N, R⁵ is absent, D is NH, and the floating double bond is between A and B;

further provided that when A is N=N, then B is C, D is N, and the floating double bond is between B and D;

31 further provided that when A is N=C(R¹⁰), then B is N, R⁵ is absent, D is C(R¹¹), and
 32 the floating double bond is between B and D;

33 further provided that when A is N(R⁹) and R⁹ is H, alkyl, or aryl, then B is C, D is
 34 C(R¹¹), and the floating double bond is between B and D;

35 further provided that when A is O or S and D is C(R¹¹), then B is C and the floating
 36 double bond is between B and D.

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38 2. The compound of claim 1, wherein A is O.

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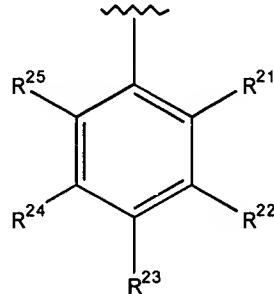
40 3. The compound of claim 2, wherein each of R¹-R⁴ is H.

41

42 4. The compound of claim 2, wherein R⁵ is substituted or unsubstituted aryl, or
 43 substituted or unsubstituted alkylaryl.

44

45 5. The compound of claim 4, wherein R⁵ has the following formula:



50 wherein each of R²¹-R²⁵ is, independently, H, substituted or unsubstituted C₁₋₆ alkyl,
 51 OH, C₁₋₆ alkoxy, N(R²⁶)(R²⁷), in which each of R²⁶ and R²⁷ is, independently, H, substituted
 52 or unsubstituted C₁₋₆ alkyl, substituted or unsubstituted aryl, substituted or unsubstituted
 53 alkylaryl, NO₂, CN, or CO₂R²⁸, in which R²⁸ is H or C₁₋₆ alkyl.

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55 6. The compound of claim 5, wherein each of R²¹-R²⁵ is, independently, H or
 56 methoxy.

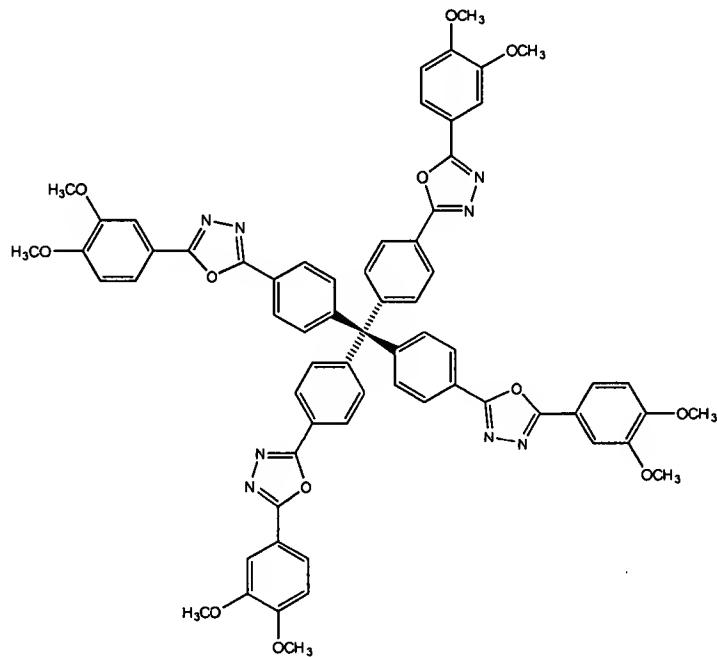
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58 7. The compound of claim 5, wherein each of R²¹-R²⁵ is, independently, H or
 59 tert-butyl.

60 8. The compound of claim 5, wherein each of R²¹-R²⁵ is, independently, H or
61 trifluoromethyl.

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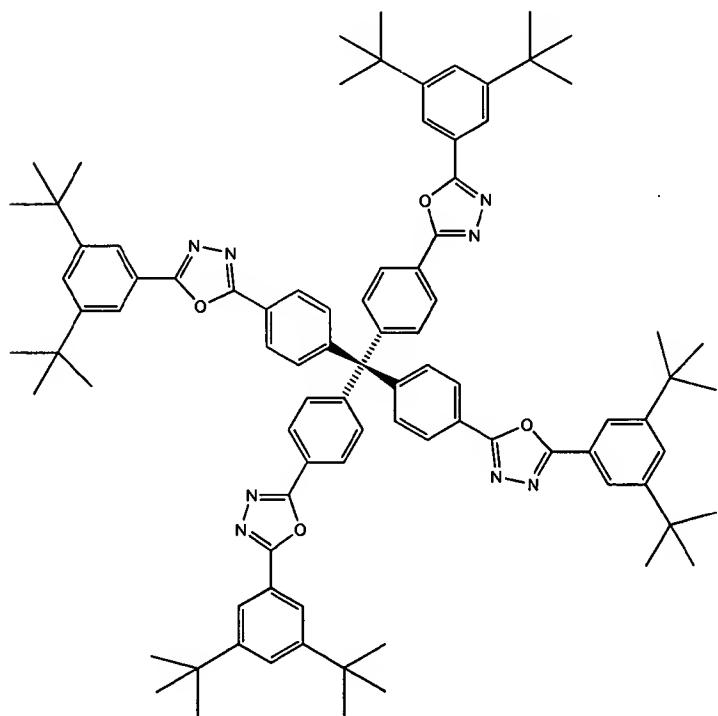
63 9. The compound of claim 1, wherein the compound has the following formula:



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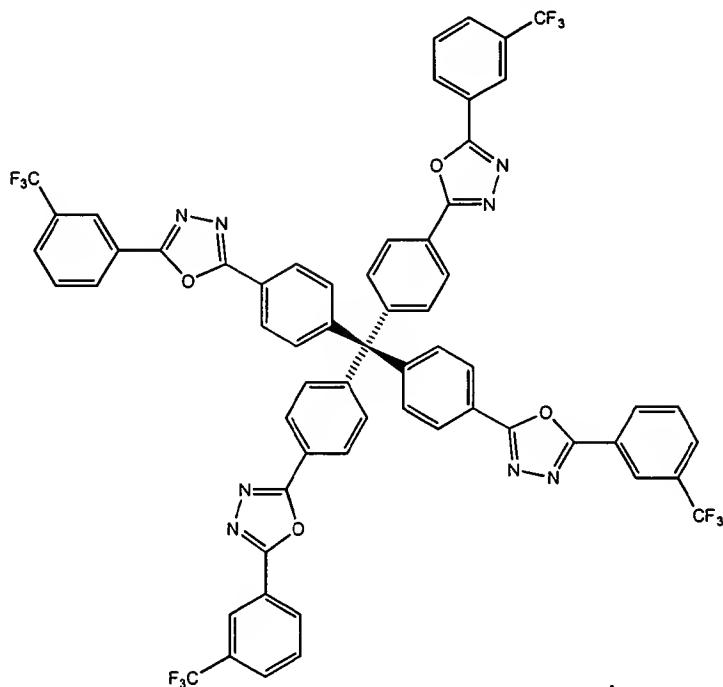
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10. The compound of claim 1, wherein the compound has the following formula:



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11. The compound of claim 1, wherein the compound has the following formula:

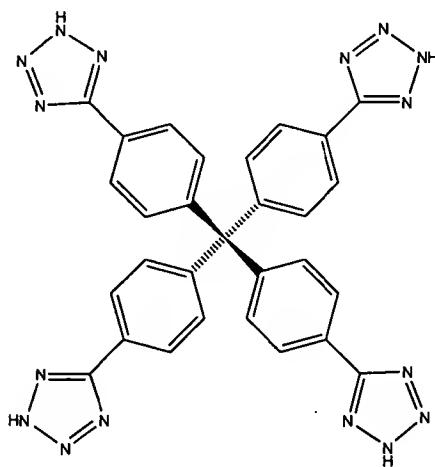


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12. The compound of claim 1, wherein A is N(R⁹), in which R⁹ is absent.

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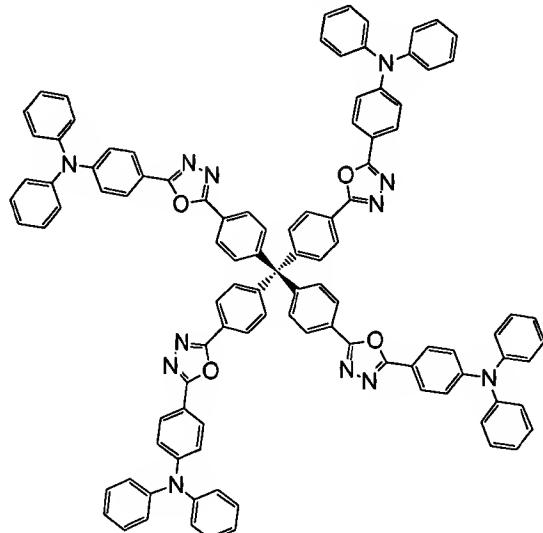
13. The compound of claim 12, wherein the compound has the following formula:



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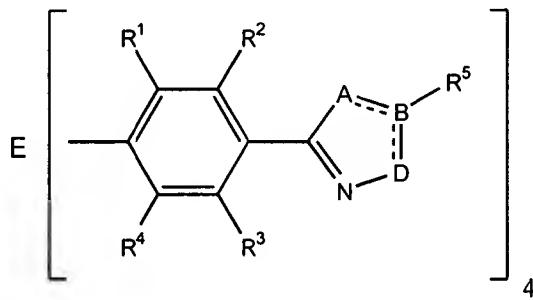
14. The compound of claim 1, wherein the compound has the following formula:



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15. An electroluminescence device comprising a substrate, a hole transporting layer, and emitting layer, and an electron transporting layer, wherein at least one of the hole transporting layer, the emitting layer, and the electron transporting layer comprises a compound having the following formula:



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wherein

each of R¹-R⁴ is, independently, H, substituted or unsubstituted C₁₋₆ alkyl, OH, C₁₋₆ alkoxy, N(R⁶)(R⁷), in which each of R⁶ and R⁷ is, independently, H or substituted or unsubstituted C₁₋₆ alkyl, NO₂, CN, or CO₂R⁸, in which R⁸ is H or C₁₋₆ alkyl; and

wherein R⁵ is H, substituted or unsubstituted C₁₋₆ alkyl, substituted or unsubstituted C₂₋₆ alkenyl, substituted or unsubstituted C₂₋₆ alkynyl, substituted or unsubstituted C₆₋₂₀ aryl, substituted or unsubstituted alkylaryl, substituted or unsubstituted C₄₋₂₀ heteroaryl, C₁₀₋₂₀ diarylaminoaryl, or is absent, or B and D, together with R⁵ and R¹¹, are substituted or unsubstituted aryl;

92 wherein A is O, S, N(R⁹) in which R⁹ is absent, H, substituted or unsubstituted alkyl,
93 or substituted or unsubstituted aryl, N=N, or N=C(R¹⁰) in which the C is adjacent to B and in
94 which R¹⁰ is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl;

95 wherein B is C or N;

96 wherein D is N, NH, or C(R¹¹) in which R¹¹ is substituted or unsubstituted alkyl, or
97 substituted or unsubstituted aryl, or B and D, together with R⁵ and R¹¹ are substituted or
98 unsubstituted aryl;

99 and wherein E is C or Si;

100 provided that when A is O and D is N, then B is C and the floating double bond is
101 between B and D;

102 further provided that when A is N(R⁹) and R⁹ is absent, then B is N, R⁵ is absent, D is
103 NH, and the floating double bond is between A and B;

104 further provided that when A is N=N, then B is C, D is N, and the floating double
105 bond is between B and D;

106 further provided that when A is N=C(R¹⁰), then B is N, R⁵ is absent, D is C(R¹¹), and
107 the floating double bond is between B and D;

108 further provided that when A is N(R⁹) and R⁹ is H, alkyl, or aryl, then B is C, D is
109 C(R¹¹), and the floating double bond is between B and D;

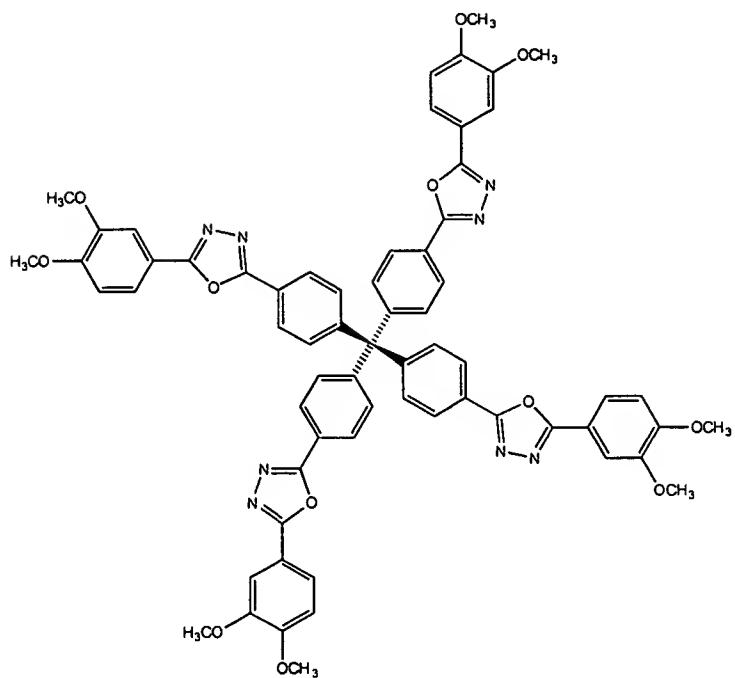
110 further provided that when A is O or S and D is C(R¹¹), then B is C and the floating
111 double bond is between B and D.

113 16. The device of claim 15, wherein A is O, B is C, and D is N.

115 17. The device of claim 16, wherein each of R¹-R⁴ is H.

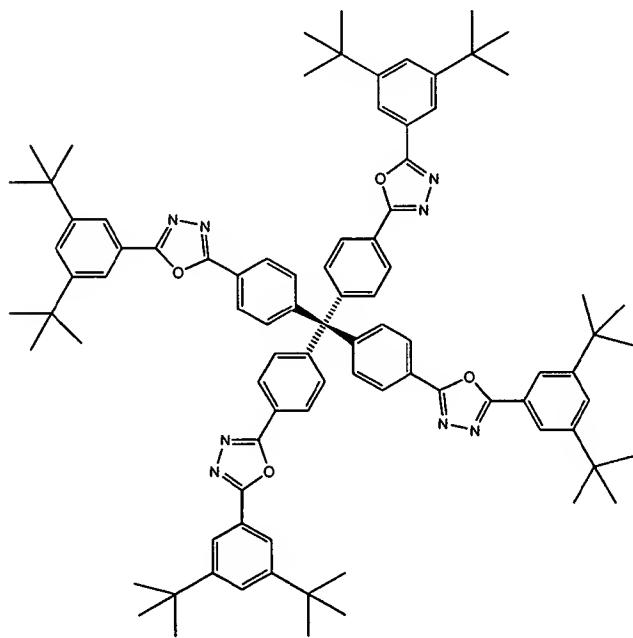
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18. The device of claim 15, wherein the compound has the following formula:



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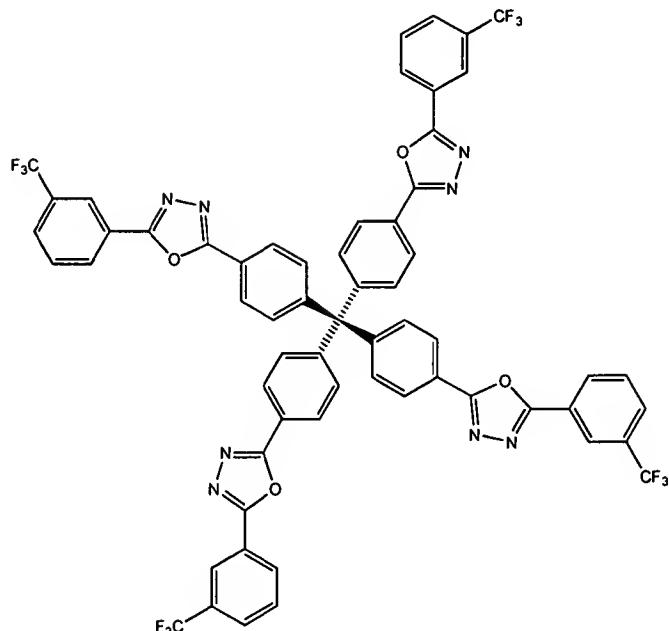
19. The device of claim 15, wherein the compound has the following formula:



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20. The device of claim 15, wherein the compound has the following formula:

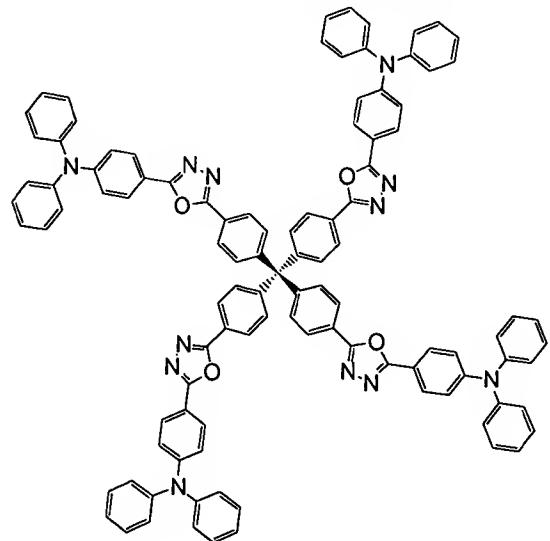


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21. The device of claim 14, wherein the compound has the following formula:



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